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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,711	03/05/2002	Sadaaki Mori	4970/OK363	7464

7590

04/14/2003

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EXAMINER

LUM, LEE S

ART UNIT

PAPER NUMBER

3611

DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,711

Applicant(s)

MORI ET AL.

Examiner

Lee Lum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 1 and 9, "rotational speed of the motor" lacks sufficient structure, i.e.; the Claims lack a speed sensor.

In Claims 2 and 10, the language "plates which are laminated..." does not appear relevant to the subsequent "so that recesses fit shapes of the permanent magnets" (emphasis added). That is, it is unclear what relevance "laminat[ion]" has to "fit shapes of the magnets".

In Claims 3, 6 and 14, second-to-last line, "maximum root-mean square" is, in itself, unclear; it is suggested that "value" be appended to the phrase, and to conform with that in Claim 11.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 2A. **Claims 1, 2, 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsushita et al 6427104 in view of Coles et al 6124688.

As best understood, re **Claims 1 and 9**, Matsushita discloses an electric power steering apparatus comprising

Torque sensor 3,

Steering assist motor 5 driven to rotate based on the detected torque,

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Drive circuit (unidentified) for the motor,

Judgement unit 100 to determine whether the rotational speed of the motor is within a predetermined range, and,

Instruction unit 100 for supplying field-weakening control (col 7, lines 5-13) of the motor to the drive circuit, when it is judged that the speed of the motor is within the range.

While the reference specifies a brushless motor (col 1, lines 44+), it does not specify its configuration regarding magnets. Coles shows brushless motor 1, with recessed magnets 27 in rotor 26 in fig 12, and col 6, lines 40-41. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this arrangement, as shown in Coles, to provide a compact brushless configuration, as is known in the art.

2B. As best understood, re **Claims 2 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over McLaughlin in view of Coles, and in further view of prior art disclosed in the present application.

Coles shows the rotor 26 as comprising recessed magnets 27, but does not show the rotor core as including laminated electromagnetic plates. The spec, on p 2, middle paragraph, shows this feature, as does fig 1. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this feature, as shown in prior art, as a functionally equivalent rotor configuration, having a compact yet effective structure.

3. **Claims 3-8 and 11-16** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

4. The prior art made of record, and not relied upon, is pertinent to this disclosure, in addition to that listed on the IDS filed 3/5/02: McCann et al 6499559, Miller 6422335, Henry et al 6373211, Coles 6351050, Sebastian et al 5982067, McLaughlin et al 5568389.

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5. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, M-F, 9-6. Our fax numbers are (703) 872-9326, 872-9327 for after-final comms, and 308-2571 for comms having given prior notice to the examiner. Any inquiry of a general nature, or relating to the status of this application/proceeding, should be directed to Customer Assistance at (703) 306-5771.

Ms. Lee S. Lum
Examiner
4/4/03



Lesley D Morris
Lesley D. Morris
~~Primary Examiner~~
SPE AWB/K